

RIVERS AND FLOODS, JULY, 1913.

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The annual rise in the Columbia River and its tributaries that was in progress during the month of June had entirely subsided by the middle of July.

The very heavy rains during the night of July 13 over the headwaters of the Sandusky River and the western half of the Muskingum River watershed caused the smaller tributaries of these rivers to rise to above flood stage. The rise at Duck Creek was almost equal to that which occurred in March, 1913. Portions of the lower valley of Duck Creek were from 10 to 25 feet under water. The Muskingum at McConnellsville crested at 28.8 feet, 5.8 feet above flood stage, and at Beverly 29.0 feet, 4.0 feet above flood stage, on July 15.

A heavy rainfall on July 24 in the vicinity of Boise, Idaho, caused a very rapid rise in the small streams, doing considerable damage in that city and vicinity.

Elsewhere the rivers were at moderate or low stages. In portions of Missouri, Kansas, and Oklahoma the smaller streams were entirely dry.

Losses due to July, 1913, floods.

State.	River system.	Item 1. General loss, bridges, etc.	Item 2.		Item 3. Suspend- ion of business.
			Crops.	Live stock.	
Oregon ¹	Columbia.....	\$63,527	\$92,645	\$91,220
Idaho ²	Boise.....
Ohio.....	Muskingum.....	1,160,590	500,000	2,000	20,800

¹ Occurred during May, June, and July.

² Losses estimated at from \$100,000 to \$150,000. It is impossible to separate the losses by items.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.